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**UNITED STATES MARINE CORPS**  
THE BASIC SCHOOL  
MARINE CORPS TRAINING COMMAND  
CAMP BARRETT, VIRGINIA 22134-5019

**AMPHIBIOUS  
OPERATIONS I & II  
B1V1000 | B2V1000  
STUDENT HANDOUT**

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## Amphibious Operations

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### Introduction

The Marine Corps is an expeditionary intervention force with the ability to move rapidly on short notice to wherever needed to accomplish whatever is required. The Corps possesses a full range of combat capabilities integrated into a single-service, air-ground combined arms team. These qualities make the Marine Corps unique when compared to other United States (US) military services.

For over 1000s of years, the Empires have conducted amphibious operations around the world. Many forms of operations fit into the category of amphibious and expeditionary operations, and the Marine Corps is prepared to conduct a variety of these tasks. These operations have become synonymous with the term Marine, and the student officer needs to understand and be able to operate in these types of missions.

### Importance

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The Marine Corps has the ability to project combat power ashore for a wide range of contingencies. Depending on the nature of the threat, we can field a *task organized* combined arms team, consisting of ground, air, and combat service support elements under a single commander. Ship, aircraft, or a combination of both may deploy these task forces, called Marine air-ground task forces (MAGTFs), as an independent force or as part of a joint task force. The information provided here will help you understand amphibious operations, naval campaigning, fleet organization and the MAGTF as well as understand the junior officer role in the execution of these operations.

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**In This Lesson**

This lesson covers the following topics:

<b>Topic</b>	<b>Page</b>
Background	6
MAGTF Core Competencies	7
MAGTF Capabilities	9
MAGTF Elements	10
Types of MAGTFs	13
Locations of Major Combat Organizations	19
Expeditionary Operations	20
Reasons for Conducting Expeditionary Ops	21
Characteristics of Expeditionary Ops	22
Sequence in Projecting Expeditionary Forces	23
Amphibious Operations	24
Characteristics of Amphibious Operations	26
Types of Amphibious Operations	27
Phases of Amphibious Operations	28
Initiating an Amphibious Operation	30
Terminating an Amphibious Operation	31
Tools of Amphibious Operations	33
Summary	51
References	52
Glossary of Terms and Acronyms	52
Notes	52

## **Amphibious Operations**

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### Terminal Learning Objectives

#### **Learning Objectives**

##### **Amphibious Operations I :**

TBS-MAGTF-1002, Without the aid of resources, identify the locations of major Marine units, without omitting key components.

TBS-MAGTF-1003 Without the aid of resources, describe Marine Air-Ground Task Force (MAGTF) organizations, without omitting key components.

##### **Amphibious Operations II :**

TBS-OFF-2104, Given Marines, an amphibious ship, landing craft, and landing plans, lead a platoon during amphibious operations to accomplish the mission.

### Enabling Learning Objectives

#### **Learning Objectives**

##### **Amphibious Operations I:**

TBS-MAGTF-1002a, Without the aid of resources, describe Marine Expeditionary Forces to include all components.

TBS-MAGTF-1002b Without the aid of resources, describe Marine Divisions to include all components.

TBS-MAGTF-1002c Without the aid of resources, describe Marine Air Wings to include all components.

TBS-MAGTF-1002d Without the aid of resources, describe Marine Logistics Groups to include all components.

TBS-MAGTF-1003a Without the aid of references, describe the Marine Air-Ground Task Force concept without omission.

TBS-MAGTF-1003b Without the aid of references, describe the four elements of a Marine Expeditionary Force (MEF) without omission.

TBS-MAGTF-1003c Without the aid of references, describe the four elements of a Marine Expeditionary Brigade (MEB) without omission.

TBS-MAGTF-1003d Without the aid of references, describe the four elements of a Marine Unit (MEU) without omission.

**Amphibious Operations II:**

TBS-OFF-2104a. Without the aid of reference, describe Marine Corps amphibious concepts without omission.

TBS-OFF-2104b. Without the aid of reference, describe the classes of U.S. Navy amphibious ships without omission.

TBS-OFF-2104c. Without the aid of reference, describe the types of landing craft without omission.

TBS-OFF-2104d. Without the aid of reference, describe the role of the Amphibious Squadron (PHIBRON) in amphibious operations without omission.

TBS-OFF-2104e. Without the aid of reference, describe the role of the marine Expeditionary Unit in amphibious operations without omission.

TBS-OFF-2104f. Without the aid of reference, describe the types of amphibious operations without omission.

TBS-OFF-2104g. Without the aid of reference, describe the phases of an amphibious operation without omission.

TBS-OFF-2104h. Without the aid of reference, describe landing plan considerations without omission.

TBS-OFF-2104m. Without the aid of a reference, describe the characteristics of expeditionary operations without omission.

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## Background

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“Our unique Service culture has allowed the Marine Corps to “think outside the box” and confront conventional military wisdom. Following the Great War, many theorists believed that the Allied experience at Gallipoli had demonstrated the folly of amphibious operations in the face of “modern” weapons. Our experimentation with amphibious techniques during the 1920s and 1930s created key capabilities necessary for success in World War II, allowing the Allies to project military power across vast oceans. Without this pre-war innovation, wresting the continent of Europe from the Axis and seizing bases on the long road to Japan would have been much more difficult and costly. Since then, the Marine Corps has continually sought to exploit opportunities and overcome challenges where domains converge, leading to our development of close air support doctrine, maritime prepositioning, and vertical envelopment.

In order to execute the Marine Corps strategic security role, the institution embraces enduring characteristics—complemented by an ever evolving set of military capabilities that continue to make the Marine Corps especially relevant in the current and future security era. These are the Marine Corps’ **naval character, our responsiveness to missions across the range of military missions, and our military professionalism**. The integrated and highly tailorable organizational capabilities inherent in our Marine Air Ground Task Force (MAGTF) structure enable our critical trans-domain role. Consisting of command, ground combat, aviation, and logistical elements organized as necessary for each particular situation, the MAGTF supports the adaptability necessary in light of the uncertainty of the operational environment and the full range of military operations we must expect.

**Naval Character-** Often mischaracterized as land forces, the Marine Corps is actually part of the Naval Service—*soldiers from the sea*. Fundamentally, this is recognition of the vital strategic role the Marine Corps provides in transitioning national combat power and influence across the critical maritime, land, and air domain interface. As such, Marine Corps forces are primarily designed to be employed, supported, and sustained at and from the sea. Mobility and maneuverability constitute the Naval Service’s primary operational attributes, stemming directly from the ability of naval forces to move long distances quickly and efficiently, and to maneuver within the maritime environment to achieve advantage in relation to an adversary.”

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## MAGTF Core Competencies

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Operations are built on a foundation of six special core competencies. The direct result of more than two centuries of expeditionary experience, these six core competencies define what Marines do and how they operate.

- Expeditionary readiness.
- Combined arms integration.
- Expeditionary operations.
- Sea-based operations.
- Forcible entry from the sea.
- Reserve Integration.

### Expeditionary Readiness

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Expeditionary readiness defines an institutional mindset that is ready to respond instantaneously to world-wide crises, 365 days a year. To Marines, “ready to respond” means much more than being “ready to go.” First it means being ever ready to win our nation’s first battles. This requires a force that can transition from peacetime to combat operations at a moment’s notice without critical reserve augmentation and with certain success. Second, it demands a force ready to flourish under conditions of uncertainty. Expeditionary readiness is about being ready to adapt to whatever is “out there,” improvising and finding unconventional solutions to unconventional problems. As a result, it demands a primary focus on the human dimension rather than the technological dimension of battle. And third, it means being ever ready to defeat the “opponent after next” — requiring a relentless commitment to innovation and change.

### Combined Arms Integration

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As specifically demanded by Congress, the nation’s naval crisis response force must be capable of acting on short notice and without immediate support from Army and Air Force warfighting forces. In other words, such a force in readiness requires an organic, combined arms capability. For over half a century, MAGTFs have trained so that a single commander directs their ground combat, air combat, and combat service support capabilities. Other services practice combined arms operations — MAGTF operations embody them.

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## MAGTF Core Competencies (Continued)

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### **Expeditionary Operations**

Expeditionary operations are much more than military expeditions on foreign soil. Like expeditionary readiness, expeditionary operations require a special mindset — one that is constantly prepared for immediate deployment overseas into austere operating environments. As a result, expeditionary operations consider host nation support a luxury and are designed to bring everything necessary to accomplish the mission — from individual equipment up to and including airfields and hospitals.

### **Sea-based Operations**

Sea-based operations provide for extraordinary strategic reach and give the nation an enduring means to influence and shape the evolving international environment. In addition, sea-based operations provide units with a large measure of inherent force protection. A highly ready, combined arms MAGTF operating from a mobile, protected sea base provides the National Command Authority (NCA) with unimpeded and politically unencumbered access to potential trouble spots around the world.

### **Forcible Entry from the Sea**

A key requirement for unilateral action is the ability to project power ashore in a theater without forward bases and in the face of armed opposition. In the past, forcible entry from the sea was defined by amphibious assaults focused on establishing lodgments on the beach and then building up combat power for subsequent operations. It is now defined as an uninterrupted movement of forces from ships located far over the horizon directly against decisive objectives.

### **Reserve Integration**

Marine Reserves routinely practice carefully crafted reserve integration plans to augment or reinforce crisis response missions and to add combat power for operations, especially at the high end of the conflict spectrum. For example, during Operation Desert Storm, 53 percent of the selected Marine Corps reserve end strength was activated, surpassing any other service reserve component activations by more than a factor of two. This degree of integration provides the Marine Corps with unprecedented mission depth, operational flexibility, and sustainability up and down the conflict spectrum.



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## MAGTF Capabilities

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The Marine Corps task organizes for operations consistent with its statutory tasking to “...provide forces of combined arms, including aviation...” by forming MAGTFs. The MAGTF is a balanced air-ground combined arms task organization of Marine Corps forces under a single commander structured to accomplish a specific mission. It is the Marine Corps’ principal organization for all missions across the range of military operations. It is designed to fight, while having the ability to prevent conflicts and control crises. All MAGTFs are task organized and vary in size and capability according to the assigned mission, threat, and battlespace environment. They are specifically tailored for rapid deployment by air or sea and ideally suited for a forward presence role.

A MAGTF provides the naval, joint, or multinational commander with a readily available force capable of operating as

- The landing force of an amphibious task organization.
- A land force in sustained operations ashore.
- A land force or the landward portion of a naval force conducting military operations other than war such as noncombatant evacuations, humanitarian assistance, disaster relief, or the tactical recovery of an aircraft or aircrew.
- A forward-deployed force providing a strong deterrence in a crisis area.
- A force conducting training with allied forces as part of theater engagement plan.

### Capabilities

MAGTFs provide joint force commanders with the capability to:

- Move forces into crisis areas without revealing their exact destinations or intentions.
- Provide continuous presence in international waters.
- Provide immediate national response in support of humanitarian and natural disaster relief operations.
- Provide credible combat power in a non-provocative posture, just over the horizon of a potential adversary, for rapid employment as the initial response to a crisis.
- Support diplomatic processes for peaceful crisis resolution before employing immediately responsive combat forces.
- Project measured degrees of combat power ashore, day or night, and under adverse weather conditions, if required.
- Operate independent of established airfields, basing agreements, and overflight rights.
- Sequentially introduce additional forces into a theater of operations.

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## MAGTF Capabilities (Continued)

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### Capabilities (Continued)

- Conduct operations ashore using organic combat service support brought into the area of operations.
  - Enable the introduction of follow-on forces by securing staging areas ashore.
  - Operate in rural and urban environments.
  - Operate under nuclear, biological, and chemical warfare conditions.
  - Withdraw rapidly at the conclusion of operations.
  - Participate fully in the joint planning process and successfully integrate MAGTF operations with those of the joint force.
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## MAGTF Elements

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### MAGTF Organization

As a modular organization, the MAGTF can be tailored to each mission through task organization. This building block approach also makes reorganization a matter of routine. In addition to the Marine Corps units, MAGTFs may have attached forces from other service and nations; e.g., naval construction force, multiple launch rocket system batteries, and armor brigades.

A key feature of Marine expeditionary organization is expandability. Crisis response requires the ability to expand the expeditionary force after its introduction in theater without sacrificing the continuity of operational capability. The MAGTF's modular structure lends itself to rapid expansion into a larger force or integration into a joint or multinational force because the MAGTF structure parallels the structure of a multidimensional joint force.

Marine forces integrated into a joint or multinational force are normally employed by the joint force commander as a MAGTF. As a task organized force, the MAGTF's size and composition depend on the committed mission. If a MAGTF is deprived of a part of its combat forces, accomplishment of the mission for which it is tailored is jeopardized.

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## MAGTF Elements (Continued)

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### MAGTF Organization (Continued)

However, on a day-to-day basis, the MAGTF may be tasked to conduct operations in support of another force and will identify capabilities; e.g., air sorties, beach and port operations, and civil affairs, excess to its mission requirements to the joint force commander that may be of use to other components of the joint force.

All MAGTFs are comprised of four core elements:

- A command element (CE).
- A ground combat element (GCE).
- An aviation combat element (ACE).
- A logistics combat element (LCE).

The MAGTF's combat forces reside within these four elements. Although MAGTFs will differ because of mission forces assigned, a standard procedure exists for organization, planning, and operations.

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### Command Element (CE)

The CE is the MAGTF headquarters. As with all other MAGTF elements it is task organized to provide the command and control capabilities necessary for effective planning, execution, and assessment of operations across the warfighting functions. The six warfighting functions are:

- Command and control.
- Intelligence.
- Maneuver.
- Fires.
- Logistics.
- Force protection.

When integrated into a joint force, the CE can exercise command and control within the joint force from the sea or ashore and/or act as a core element around which a joint task force headquarters may be formed. It can also provide interagency coordination for military operations other than war and provide a reach back capability for component commanders.

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## MAGTF Elements (Continued)

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**Ground Combat Element (GCE)**

The GCE is task organized to conduct ground operations, project combat power, and contribute to battlespace dominance in support of the MAGTF's mission. It is formed around an infantry organization reinforced with artillery, reconnaissance, assault amphibian, tank, and engineer forces. The GCE can vary in size and composition from a rifle platoon to one or more Marine divisions. It is the only element that can seize and occupy terrain.

**Air Combat Element (ACE)**

The ACE is task organized to conduct air operations, project combat power, and contribute to battlespace dominance in support of the MAGTF's mission by performing some or all of the six functions of Marine aviation. It is formed around an aviation headquarters with air control agencies, aircraft squadrons or groups, and combat service support units. It can vary in size and composition from an aviation detachment of specifically required aircraft to one or more Marine aircraft wings. The ACE may be employed from ships or forward expeditionary land bases and can readily transition between sea bases and land bases without loss of capability. It has the capability of conducting aviation command and control across the battlespace.

**Logistics Combat Element (LCE)**

The LCE is task organized to provide all functions of tactical logistics necessary to support the continued readiness and sustainability of the MAGTF. The LCE is formed around a combat service support headquarters and may vary in size and composition from a support detachment to one or more Marine logistics groups. The LCE, operating from sea bases or from expeditionary bases established ashore, enables sustainment of forces, thus extending the MAGTF's capabilities in time and space. It may be the main effort of the MAGTF during humanitarian assistance missions or selected phases of maritime pre-positioning force (MPF) operations.

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## Types of MAGTFs

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MAGTFs are integrated combined arms forces structured to accomplish specific missions. MAGTFs are generally categorized in four types:

- Marine expeditionary force.
- Marine expeditionary brigade.
- Marine expeditionary unit.
- Special purpose Marine air-ground task force.

### **Marine Expeditionary Force (MEF)**

The MEF is the Marine Corps' principal warfighting organization. It can conduct and sustain expeditionary operations in any geographic environment. MEFs are the sole standing MAGTFs; e.g., they exist in peacetime as well as wartime. Size and composition can vary greatly depending on the requirements of the mission. A lieutenant general normally commands a MEF. It can be comprised of:

- A standing command element.
- A GCE of one or more divisions.
- An ACE of one or more aircraft wings.
- A LCE of one or more Marine logistics groups.

A MEF typically deploys by echelon with 60 days of sustainment. The MEF commander and staff can form the nucleus for a joint task force or functional component headquarters. A MEF nominally consists of a permanent CE as well as a tailored Marine division, Marine aircraft wing, and Marine logistics group. Each MEF deploys a Marine Expeditionary Unit (Special Operations Capable) (MEU[SOC]) on a continuous basis to provide forward presence and crisis response capabilities to the combatant commanders.

The three standing MEFs are:

- I MEF based in southern California and Arizona.
  - II MEF based in North Carolina and South Carolina.
  - III MEF based in Okinawa, mainland Japan, and Hawaii.
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## Types of MAGTFs (Continued)

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### **Marine Expeditionary Brigade (MEB)**

The Marine expeditionary brigade (MEB) is the “middle-weight” MAGTF. It is a crisis response force capable of forcible entry and enabling the introduction of follow-on forces. It can serve as part of a joint or multinational force and can provide the nucleus of a joint task force headquarters. It is unique in that it is the smallest MAGTF with a fully capable aviation element that performs all six functions of Marine aviation and is self-sustaining for 30 days. A MEB is capable of rapid deployment and employment deploying either by air, in combination with maritime pre-positioning ships, or by amphibious shipping.

As a result, the MEB can conduct the full range of combat operations and may serve as the lead echelon of the MEF. The MEB is not a standing organization but rather imbedded within the MEF. As a result, MEBs are task organized for specific missions from assets with the MEF. The MEB conducts the mission or prepares for the subsequent arrival of the rest of the MEF or other joint or multinational forces. However, the deployment of a MEB does not necessarily mean that all the forces of the MEF will follow.

A MEB notionally consists of the following elements:

- A CE may include additional assets such as command and control, force reconnaissance company, signals intelligence capabilities from the radio battalion, and engineering capabilities from the naval construction regiments. It can also control the forces of other services and nations in missions ranging from combat in an urban area to disaster relief.
- A GCE is composed of an infantry regiment reinforced with artillery, reconnaissance, engineer, light armored reconnaissance units, assault amphibian units, and other attachments as required.

## Types of MAGTFs (Continued)

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### Marine Expeditionary Brigade (MEB) (Continued)

- An ACE is composed of a Marine aircraft group comprised of combat assault transport helicopters, utility and attack helicopters, vertical/short takeoff and landing fixed-wing attack aircraft, air refuelers/transport aircraft, and other detachments as required.
- A LCE is task organized around a combat logistics regiment. This element has engineering, supply, transportation, landing support for beach, port, and airfield delivery, medical and maintenance capabilities.

### Marine Expeditionary Unit (Special Operations Capable) (MEU(SOC))

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The MEU(SOC) is the standard forward-deployed Marine expeditionary organization. A forward-deployed MEU(SOC) provides an immediate sea-based response to meet forward presence and power projection requirements.

A colonel commands a MEU(SOC) which deploys with 15 days of supplies. The MEU(SOC) is normally comprised of

- A CE that may include additional assets such as command and control, force reconnaissance company, and signals intelligence capabilities from the radio battalion.
- A GCE comprised of an infantry battalion reinforced with artillery, reconnaissance, engineer, tanks, light armored reconnaissance units, assault amphibian units, and other attachments as required.
- An ACE comprised of a combat assault transport helicopter squadron reinforced with utility and attack helicopters, vertical/short takeoff and landing fixed wing attack aircraft, air refuelers/transport aircraft, and other detachments as required.
- A LCE task organized around a MEU LCE. This element has engineering, supply, transportation, landing support, medical, and maintenance capabilities.

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## Types of MAGTFs (Continued)

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### **Marine Expeditionary Unit (Special Operations Capable) (MEU(SOC)) (Continued)**

A forward deployed MEU(SOC) operates continuously in the Mediterranean Sea, the western Pacific Ocean, and the Indian Ocean or Arabian Gulf region. Embarked aboard a Navy amphibious squadron, the MEU(SOC) provides a combatant commander or other operational commander a quick, sea-based reaction force for a wide variety of missions such as limited forcible entry operations, noncombatant evacuations, raids, or disaster relief. In many cases the MEU embarked on amphibious shipping may be the first US force at the scene of a crisis and can enable the actions of larger follow-on forces. It can provide a visible and credible presence in potential trouble spots and can demonstrate the US' willingness to protect its interests overseas.

While the MEU(SOC) is not a special operations force per se, it can support special operations forces and execute certain maritime special operations missions. These include reconnaissance and surveillance; specialized demolitions; tactical recovery of aircraft and personnel; seizure/recovery of offshore energy facilities; seizure/recovery of selected personnel or material; visit, board, search, and seizure of vessels; and *in extremis* hostage recovery.

Prior to deployment, the MEU(SOC) undergoes an intensive 6-month training program focusing on its conventional and selected maritime special operations missions. Training culminates with a thorough evaluation and certification as "special operations capable." To receive this certification, a MEU must demonstrate competence across the entire spectrum of requirement capabilities, be able to plan and execute any assigned mission within 6 hours of notification, and conduct multiple missions simultaneously. Inherent capabilities of a MEU(SOC) are divided into four broad categories:

The complete list of capabilities subcategories for the MEU(SOC) is found in MCO 3120.9A, Policy for Marine Expeditionary Unit (Special Operations Capable) (MEU(SOC)).

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## Types of MAGTFs (Continued)

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### **Special Purpose Marine Air Ground Task Force (SPMAGTF)**

A special purpose MAGTF is a nonstanding MAGTF temporarily formed to conduct a specific mission for which a MEF or other unit is either inappropriate or unavailable. They are organized, trained, and equipped to conduct such a mission. SPMAGTFs have been deployed for a variety of missions such as humanitarian relief and coalition training. Designation of an SPMAGTF is based on

- The mission it is assigned (“Special Purpose MAGTF Hurricane Relief”).
- The location in which it will operate (“Special Purpose MAGTF Somalia”).
- The name of the exercise in which it will participate (“Special Purpose MAGTF Unitas”).

An SPMAGTF may be of any size—but normally no larger than a MEU—with narrowly focused capabilities required to accomplish a particular mission. It may be task organized from non-deployed Marine Corps forces or formed on a contingency basis from a deployed MAGTF. Regimental level headquarters often assume the role as a special MAGTF CE and may conduct training in anticipated mission skills prior to establishment. A SPMAGTF may be deployed using commercial shipping or aircraft, strategic airlift, amphibious shipping, or organic Marine aviation.

### **Air Contingency MAGTF (ACM)**

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An important type of SPMAGTF is the air contingency MAGTF (ACM). An ACM is an on-call, task organized alert force that is maintained by all three MEFs. Lead echelons of an ACM can deploy within 18 hours of notification. It can be dispatched virtually worldwide to respond to a rapidly developing crisis. The ACM is the MEF’s force in readiness. It can deploy independently or in conjunction with amphibious forces, MPFs, or other expeditionary forces.

Because it can deploy so rapidly, readiness is paramount. Equipment and supplies intended for use as part of an ACM are identified and, where appropriate, stored and staged for immediate deployment. Personnel continuous focus is on their tactical readiness. The ACM is airlifted to a secure airfield and carries its own initial sustainment.

## **Types of MAGTFs (Continued)**

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### **Air Contingency MAGTF (ACM) (Continued)**

The ACM is comprised of the same elements as any MAGTF although normally an ACM is a MEU-size force. Due to the need to reduce to an absolute minimum the size and weight of an air deployed force, only those personnel and equipment needed to perform the function of each MAGTF element are included in the ACM.

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## Locations of Major Combat Organizations

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MAGTFs are located throughout the world to speed their responsiveness to contingencies. The table below identifies their locations and the units that comprise their GCA, ACE, and LCE.

<b>MEF</b>	<b>I MEF</b>	<b>II MEF</b>	<b>III MEF</b>
<b>Location</b>	Camp Pendleton, CA	Camp Lejeune, NC	Camp Courtney, Okinawa, Japan
<b>GCE</b>	1 <sup>st</sup> Marine Division HQ, Camp Pendleton, CA	2 <sup>nd</sup> Marine Division HQ, Camp Lejeune, NC	3 <sup>rd</sup> Marine Division HQ, Camp Courtney, Okinawa, Japan
<b>ACE</b>	3 <sup>rd</sup> Marine Aircraft Wing HQ, Marine Corps Air Station, Miramar, CA	2 <sup>nd</sup> Marine Aircraft Wing HQ, Marine Corps Air Station Cherry Point, NC	1 <sup>st</sup> Marine Aircraft Wing HQ, Camp Foster, Okinawa, Japan
<b>LCE</b>	1 <sup>st</sup> Marine Logistics Group, Camp Pendleton, CA	2 <sup>nd</sup> Marine Logistics Group HQ, Camp Lejeune, NC	3 <sup>rd</sup> Marine Logistics Group HQ, Camp Kinser, Okinawa, Japan

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## MAGTF Summary

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The fundamentals involved with understanding the Marine air-ground task force are invaluable to you as an officer, because it helps you to understand the larger picture of how the Marine Corps fights. The concepts that were presented herein are the basics that you need to understand but are not all inclusive. To continue your study of the fundamentals of the MAGTF and its employment, see the references below.

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## Expeditionary Operations

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An expedition is a military operation conducted by an armed force to accomplish a specific objective in a foreign country. The defining characteristic of an expeditionary operation is the projection of force into a foreign setting. By definition, an expedition thus involves the deployment of military forces and their requisite support some significant distance from their home bases to the scene of the crisis or conflict. All expeditions involve the projection of power into a foreign setting. However, it is important to recognize that not all power projection constitutes expeditionary operations; power projection is a necessary component but not a sufficient condition by itself to constitute an expeditionary operation. Operations that do not involve actual deployment of forces are not expeditionary operations. Expeditionary forces vary significantly in size and composition. Expeditionary operations may also vary greatly in scope, ranging from full-scale combat to humanitarian missions.

The term “expeditionary” implies a temporary duration with the intention to withdraw from foreign soil after the accomplishment of the specified mission. The term “expeditionary” also implies austere conditions and support. This does not mean that an expeditionary force is necessarily small or lightly equipped, but that it is no larger or heavier than necessary to accomplish the mission. Supplies, equipment, and infrastructure are limited to operational necessities; amenities are strictly minimized. Expeditionary bases or airfields, for example, provide less than the full range of support typically associated with permanent stations. Operational considerations such as force protection and intelligence prevail over administrative, quality-of-life, or other considerations. This tendency toward austerity is derived from security considerations, the temporary nature of expeditionary operations, and the imperative to minimize lift and support requirements.

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## Reasons for Conducting Expeditionary Operations

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There are many policy aims or military missions that can be accomplished only by establishing a potent military force on foreign soil. In numerous situations, physical destruction alone cannot achieve policy aims, or massive destruction is inconsistent with political goals. Expeditionary operations will thus be required for a variety of reasons, including:

- Assurance that policy objectives pursued by other means have in fact been secured; for example, to ensure compliance with established diplomatic solutions such as the adherence to cease-fire arrangements or an agreement to hold free elections.
  - Seizing or controlling key physical objectives such as airports, ports, resource areas, or political centers in order to ensure their safe use by all groups, to deny their use to an enemy or disruptive element, or to facilitate future actions such as the introduction of follow-on forces.
  - Controlling urban or other restrictive terrain.
  - Establishing a close, physical, and highly visible presence in order to demonstrate political resolve, deter aggressive action, or compel desired behavior.
  - Establishing and maintaining order in an area beset by chaos and disorder.
  - Protecting or rescuing U.S. citizens or other civilians.
  - Separation of warring groups from each other or from the population at large, especially when enemy or disruptive elements are embedded in the population.
  - Providing physical relief and assistance in the event of disaster.
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## Characteristics of Expeditionary Operations

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- **Expeditionary Mindset.** Expeditionary Marine forces must establish and maintain an expeditionary mindset—an expeditionary culture—devoted to readiness and the mental agility and adaptability to accommodate changing conditions and accomplish rapidly changing missions with the forces and capabilities at hand.
  - **Tailored Forces.** Marine forces are task-organized into MAGTFs to conduct expeditionary operations. MAGTFs are designed to accomplish the mission assigned and do not include forces or capabilities not required by the mission. Therefore, those forces needed to do the job—and only those forces—are employed.
  - **Forward Deployment.** The presence of forward-deployed MAGTFs close to the crisis or objective area can expedite accomplishing the mission. They allow for a real deterrence, as the threat of employment is imminent and credible. Forward-deployed MAGTFs also can serve as a precursor to larger follow-on forces.
  - **Rapid Deployment.** Expeditionary forces must be able to get to the crisis or AO quickly with all their capabilities ready to be employed. MAGTFs can rapidly deploy using airlift, sealift or movement or maneuver from a forward expeditionary site. Marines are always prepared to deploy anywhere in the world.
  - **Expeditionary Basing.** Marines are prepared to take advantage of any opportunity to use expeditionary basing or sites to support rapid deployment and employment within the AO. Amphibious shipping, forward expeditionary sites, and intermediate staging bases are all methods the MAGTFs can employ to ensure the rapid buildup and effective employment of combat power.
  - **Forcible Entry.** Expeditionary forces must be able to gain access to the AO despite the efforts of the enemy to prevent it. While Marines strive to avoid enemy strengths and take advantage of the enemy's weakness, MAGTFs must be prepared to defeat the enemy to allow follow-on operations. Marines are highly trained in forcible entry techniques such as amphibious assaults and helicopterborne (air assault) operations. Marines also train with allied, multinational, and joint forces such as United Kingdom Royal Marines, Republic of Korea Marines, and United States Army airborne forces.
  - **Sustainment.** Expeditionary operations are often conducted in austere theaters or undeveloped areas of the world. Forces must be able to sustain their operations, providing the essential supplies and services necessary to keep the force manned and equipped to accomplish the mission. MAGTFs are well-suited to operate in these conditions as MAGTFs bring robust logistic and combat service support to the operation. Sea-basing, expeditionary sites, and the use of pre-positioned supplies and equipment assist in sustaining the force.
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## Sequence in Projecting Expeditionary Forces

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The projection of an expeditionary force generally occurs in the following sequence:

- **Pre-deployment actions.** All military expeditions begin with planning and pre-deployment actions. These actions include the commander's organization of the deployment to ensure that forces arrive in the objective area in a logical sequence, at the right time, and with the correct equipment and sustainment to support the concept of operation.
- **Deployment.** Deployment is the movement of forces, their equipment, and their sustainment to either a theater of operations or an objective area in accordance with the commander's plan. Airlift is normally the quickest way to deploy forces, although it requires the presence of a secure airhead at the destination. The quickest way to introduce significant, sustainable forces is by sealift. Maritime Prepositioning Force (MPF) operations combine the advantages of both airlift and sealift.
- **Entry.** "Entry" refers to the initial introduction of forces onto foreign soil. During this period, expeditionary forces are often at their greatest risk, and for this reason, the introduction of forces is often a complicated military evolution. Entry is normally accomplished by seaborne or airborne movement, although in some cases forces may be introduced by ground movement from an expeditionary base in an adjacent country.
- **Enabling Actions.** Enabling actions refer to those preparatory actions taken by the expeditionary force to facilitate the eventual accomplishment of the mission. Deployment and entry could also be thought of as enabling actions, but because of their importance and particular requirements, we have considered them separately. Enabling actions may include, for example, seizing a port or airfield to facilitate the secure introduction of follow-on forces. They may include establishing the necessary logistics and other support capabilities.
- **Decisive Actions.** Decisive actions are those actions intended to create the conditions that will accomplish the political objective -- in other words, to accomplish the mission. In disasters, they include relief operations.
- **Redeployment.** Because expeditions are by definition temporary, all expeditionary operations involve redeployment; the departure of the expeditionary force or a transition to a permanent presence of some sort. This is often one of the most difficult aspects of expeditionary operations. Departure is not as simple as the tactical withdrawal of the expeditionary force from the scene. It requires the withdrawal of the forces in a way that maintains the desired political situation as well the security of the forces.

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## Amphibious Operations

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An amphibious operation is a military expeditionary operation launched from the sea by an amphibious force embarked in ships or craft with the primary purpose of introducing a landing force ashore in hostile or potentially hostile area(s) to accomplish an assigned mission. An amphibious force is defined as an amphibious task force (ATF) and a landing force (LF) together with other forces that are trained, organized, and equipped for amphibious operations. Amphibious operations apply maneuver principles to expeditionary power projection in joint and multinational operations in order exploit the element of surprise and capitalize on enemy weakness. There are four main purposes for conducting amphibious operations. They are:

- Prosecute further combat operations ashore.
- Obtain a site for an advance naval, land or air base.
- Deny use of an area or facilities to the enemy.
- Fix enemy forces and attention, providing opportunities for other combat operations.



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## Amphibious Operations (Continued)

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### Capabilities and Strengths

*Strategic mobility and flexibility.* The sea allows for maximum strategic, operational and tactical mobility, and flexibility. Once ashore, units can be sustained through sea-based logistics for extended periods of time.

*Ability to strike at a point of our choosing.* Vast coastlines make it impossible for a defender to be strong everywhere. Amphibious operations allow the attacker to maximize the initiative and strike at the enemy's weakest point.

*Projection of power ashore.* The only way to truly project power and influence ashore is to introduce ground combat troops.

*Forcible entry.* If all else fails, the ability to make a forcible entry from the sea is the most important strength of amphibious operations.

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### Disadvantages

The salient requirement of an amphibious operation is the necessary swift and uninterrupted build-up of sufficient combat power ashore from an initial zero capability to full striking power as the attack progresses toward its objectives. This requirement is the primary difference between an amphibious operation and sustained land warfare. Other disadvantages include:

*Initial vulnerability.* The landing force is extremely vulnerable during the assault's early hours. Strength ashore must be built up from zero combat power to a balanced force capable of accomplishing the assigned mission. Once ship-to-shore movement is launched, the assault is relatively inflexible until the necessary strength is established ashore.

*Natural hazards.* The special effects of weather, surf, and hydrography are potent hazards affecting amphibious operation conduct. These hazards can be overcome through: effective planning (landing sites, times, etc.), the use of helicopters and amphibious assault vehicles (AAVs), and good reconnaissance.

*Complexity.* The technical, operational, and logistical problems inherent with amphibious operations require detailed planning and realistic rehearsals.

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## Characteristics of Amphibious Operations

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**Integration of Navy & Landing Forces**

The key characteristic of an amphibious operation is close coordination and cooperation between the ATF, LF, and other designated forces.

**Rapid Buildup of Combat Power from the Sea to Shore**

The salient requirement of an amphibious assault is the necessity for swift, uninterrupted buildup of sufficient combat power ashore from an initial zero capability to full coordinated striking power as the attack progresses toward amphibious force objectives.

**Task Organized Forces**

Capable of multiple missions across the full range of military operations to enable joint, allied, and coalition operations, amphibious forces are task-organized based on the mission.

**Unity of Effort and Operational Coherence**

The complexity of amphibious operations and the vulnerability of forces engaged in amphibious operations require an exceptional degree of unity of effort and operational coherence.

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## Types of Amphibious Operations

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<b>Amphibious Assault</b>	The principal type of amphibious operation; involves establishing a force on a hostile or potentially hostile shore.
<b>Amphibious Raid</b>	<p>A limited type of amphibious operation; is a landing from the sea on a hostile or potentially hostile shore involving a swift incursion into, or a temporary occupation of, an objective followed by a planned withdrawal. Raids are conducted to:</p> <ul style="list-style-type: none"><li>• Inflict loss or damage</li><li>• Secure information</li><li>• Create a diversion</li><li>• Capture or evacuate individuals and/or materials</li><li>• Execute deliberate deception operations</li><li>• Destroy enemy information-gathering systems</li></ul>
<b>Amphibious Demonstration</b>	An amphibious operation conducted to deceive the enemy by a show of force with the expectation of deluding the enemy into a course of action unfavorable to him.
<b>Amphibious Withdrawal</b>	An amphibious operation involving the extraction of forces by sea in naval ships or craft from a hostile or potentially hostile shore.
<b>Other Amphibious Operations</b>	Not all amphibious operations conducted can be categorized by these four types. Forces may be called upon to conduct non-conventional amphibious operations that may closely parallel one of the four types, such as noncombatant evacuation operations and foreign humanitarian assistance.

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## Phases of Amphibious Operations

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Amphibious operations follow a well-defined pattern, sequence of events, or activities. The general sequence is a succession of phases, which may overlap in time, but usually occur in this sequence: PERMA, which stands for planning, embarkation, rehearsal, movement, and action.

### Planning

The planning phase normally denotes the period extending from the issuance of an order that directs the operation to take place and ends with the embarkation of landing force. However, planning is continuous throughout the operation. Although planning does not cease with the termination of this phase, it is useful to distinguish between the planning phase and subsequent phases because of the change that may occur in the relationship between amphibious force commanders at the time the planning phase terminates and the operational phase begins. The planning phase is the only phase in which the Commander, Amphibious Task Force (CATF) and Commander, Landing Force (CLF) are co-equal. The planning phase begins with the Initiating directive — an order from an establishing authority to the CATF to conduct an amphibious operation. The initiating directive provides for the establishment of the Amphibious Task Force (ATF), states the mission, provides forces required, designates the CATF, CLF, and other COs, and defines the amphibious operation area (AOA) in terms of land, air, and sea.

### Embarkation

The embarkation phase is the period during which the landing forces, with their equipment and supplies, embark in assigned shipping. The organization for embarkation needs to provide flexibility to support changes to the original plan. The landing plan scheme of maneuver ashore are based on conditions and enemy capabilities existing in the operational area before embarkation of the landing force. A change in conditions of friendly or enemy forces during the movement phase may cause changes in either plan with no opportunity for reconfiguration of the landing force. The extent to which changes in the landing plan can be accomplished may depend on the ability to reconfigure embarked forces.

## Phases of Amphibious Operations (Continued)

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### Embarkation (Continued)

Embarkation plans are the plans prepared by the landing force and appropriate subordinate commanders containing instructions and information concerning the organization for embarkation, assignment to shipping, supplies and equipment to be embarked, location and assignment of embarkation of the landing force. The landing plan and scheme of maneuver will drive the embarkation plan and will result in combat loading.

Combat loading is the arrangement of personnel and the stowage of equipment and supplies in a manner designed to conform to the anticipated tactical operation of the organization embarked. Each individual item is stowed so that it can be unloaded at the required time.

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### Rehearsal

The rehearsal phase is the period during which the prospective operation is rehearsed for the purpose of:

- Testing the adequacy of plans, timing of detailed operations, and combat readiness of participating forces.
- Ensuring that all echelons are familiar with plans.
- Providing an opportunity to reconfigure embarked forces and equipment.
- Tests communications.

Rehearsal may consist of an actual landing or may be conducted as a command post exercise.

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### Movement

The movement phase is the period during which various elements of the amphibious force move from points of embarkation or from a forward-deployed position to the operational area. This move may be via rehearsal, staging, or rendezvous areas. The movement phase is completed when the various elements of the amphibious force arrive at their assigned positions in the operational area.

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### Action

The decisive action phase is the period from the arrival of the amphibious force in the operational area, through the accomplishment of the mission and the termination of the amphibious operation.

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## INITIATING AN AMPHIBIOUS OPERATION

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Amphibious operations commence with the initiating directive, issued by the commander with establishing authority, to the AF commanders. The initiating directive is an order to subordinate commanders to conduct military operations. It is issued by the unified commander, subunified commander, Service component commander, or JFC delegated overall responsibility for the operation. **The initiating directive may come in the form of a warning order, an alert order, a planning order, or an operation order(OPORD).** The complete information required to conduct an amphibious operation may come from a combination of these orders (e.g., a warning order followed by an alert order or OPORD). The initiating directive normally provides the following information:

- The establishing authority's mission, intent, and concept of operations (CONOPS).
- Designation of required commanders, establishment of their command relationships, and provision of special instructions (SPINS) as required to support the AF organization and mission. SPINS may include an establishing directive when a support relationship is established among designated commanders of the AF. The establishing directive is discussed in detail in Chapter II, "Command and Control."
- Designation of the AF's assigned, attached, and supporting forces.
- Assignment of an operational area as appropriate.
- Assignment of tasks.
- Assignment of responsibility and provision of necessary coordinating instructions for the conduct of supporting operations.
- Target dates for execution of the operation.
- Additional coordinating instructions, as required.

## TERMINATING AN AMPHIBIOUS OPERATION

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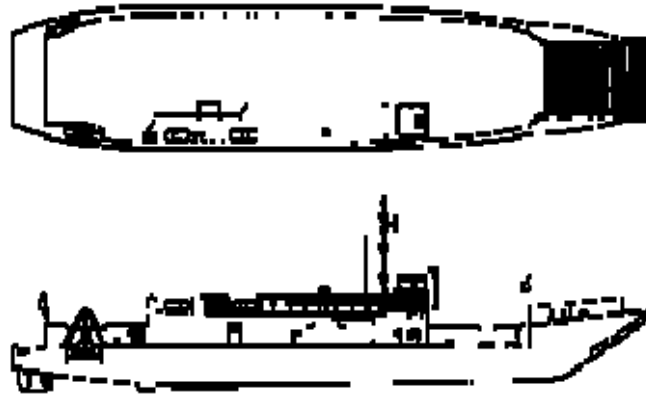
The ability to know how and when to terminate amphibious operations is part of operational design. The termination of the amphibious operation is predicated on the accomplishment of the amphibious mission per the specific conditions contained in the initiating directive. **Upon completion of the amphibious operation, the establishing authority will provide direction as required for command arrangements and assignment of AFs.** Some type of military operation may be required and will normally continue after the conclusion of the amphibious operation. Commanders and their staffs should continually assess the ongoing operation in light of assigned objectives and in consideration of the transition to other operations, anticipated or not.

## TOOLS OF AN AMPHIBIOUS OPERATION

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### Landing Craft Utility (LCU)

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#### LCU 1610, 1627 and 1646 Class

The LCU's built in the 1970s are 135 feet long and can hold 11 crew members. Although the Navy now has a newer craft, the Landing Craft Air Cushion (LCAC), the LCUs have the backbone for heavier loads. It can carry 180 tons of equipment or 400 combat equipped Marines. Its development and design updated the landing craft used in World War II, made famous by the invasion of Normandy Beach and immortalized in numerous news reels and movies. However, the LCU requires a 9 foot draft beneath it's keel to operate safely, making it less versatile than the LCAC, which flies on top of water or ground. Another difference between the two landing craft is the LCU is home away from home for its crew, because it can operate independent of the amphibious ships on which it embarks. It contains living compartments that include sleeping quarters, a wash room with shower, a clothes washer and dryer, a lounge with a television and a complete galley.

The 189 ton LCU are designed to carry 3 M-60 tanks, as many as 450 combat equipped troops or a variety of other support equipment such as surf cranes, bulldozers, trucks or artilleries. An LCU has a complement of a ten man crew consisting of a Radioman, Engineman, Electricians, Mess Management Specialist, Quartermasters and Boatswain mate, under the command of a Chief or First Class Craftmaster. The Craftmaster is wholly responsible for this craft and crew.

#### LCU 2000

The LCU 2000 moves containers/general/ vehicular cargo. It is used for unit deployment and relocation. It has a bow ramp for Roll-on/Roll-off cargo, and a bow thruster to assist in beaching and beach extraction. The LCU 2000 can carry cargo from deep draft ships to shore ports or areas too shallow for larger ships. The LCU-2000 provides worldwide transport of combat vehicles and sustainment cargo, as well as intratheater movement and can execute cargo operations along coastal MSRs. It is capable of receiving cargo from a ship anchored in the stream and transporting that cargo to shore for discharge



over the bow ramp. Because of its shallow draft, the LCU can carry cargo from deep drafted ships to shore ports or areas too shallow for larger ships.

**Specifications**

	<b>LCU-1600</b>	<b>LCU-2000</b>
<b>Propulsion</b>	(2) Diesels	(2) Diesels
<b>Length overall</b>	135 ft	174 ft
<b>Beam</b>	29.5 ft	42 ft
<b>Draft</b>	6 ft. 10 in.	9 ft
<b>Displacement</b>	437 tons	575 long tons
<b>Deck area</b>	1,850 sqft	2,500 square feet
<b>Payload</b>	170 tons of cargo, 3 tanks or 400 troops	350 tons (equivalent payload of 8 C-17 loads)
<b>Range</b>	1,200 nautical miles	6,500 nautical miles at 10 knots
<b>Crew size</b>	11	13

## **Landing Craft Air Cushion (LCAC)**

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**Error!**

The Landing Craft, Air Cushion (LCAC) Transport weapons systems, equipment, cargo and personnel of the assault elements of the Marine Air/Ground Task Force both from ship to shore and across the beach. The landing craft air cushion (LCAC) is a high-speed, over-the-beach fully amphibious landing craft capable of carrying a 60-75 ton payload. Capable of operating from existing and planned well deck ships, it is used to transport weapons systems, equipment, cargo and personnel from ship to shore and across the beach. The advantages of air-cushion landing craft are numerous. They can carry heavy payloads, such as an M-1 tank, at high speeds. Their payload and speed mean more forces reach the shore in a shorter time, with shorter intervals between trips.

The LCAC is capable of carrying a 60 ton payload (up to 75 tons in an overload condition) at speeds over 40 knots. Fuel capacity is 5000 gallons. The LCAC uses an average of 1000 gallons per hour. Maneuvering considerations include requiring 500 yards or more to stop and 2000 yards or more turning radius. The LCAC, like all "hovercraft," rides on a cushion of air. The air is supplied to the cushion by four centrifugal fans driven by the craft's gas turbine engines. The air is enclosed by a flexible skirt system manufactured of rubberized canvas. No portion of the LCAC hull structure penetrates the water surface; the entire hull rides approximately four feet above the surface.

LCAC operates in waters regardless of depth, underwater obstacles, shallows or adverse tides. It can proceed inland on its air cushion, clearing obstacles up to four feet, regardless of terrain or topography), including mud flats, sand dunes, ditches, marshlands, riverbanks, wet snow, or slippery and icy shorelines. Equipment, such as trucks and track vehicles, can disembark via ramps located both forward and aft, there by shortening critical off load time. It is also important to point out the LCAC propulsion system makes it less susceptible to mines than other assault craft or vehicles.

LCAC is a dramatic innovation in modern amphibious warfare technology. It provides the capability to launch amphibious assaults from points over the horizon, thereby decreasing risk to ships and personnel and generating greater uncertainty in the enemy's mind as to the location and timing of an assault, thereby maximizing its prospects of success. The LCAC is accessible to more than 80% of the world's coastlines. It can make an undisclosed, over the horizon (OTH) assault from up to 50 miles offshore. Its high speed complements a joint assault with helicopters, so personnel and equipment can be unloaded beyond the beach in secure landing areas.

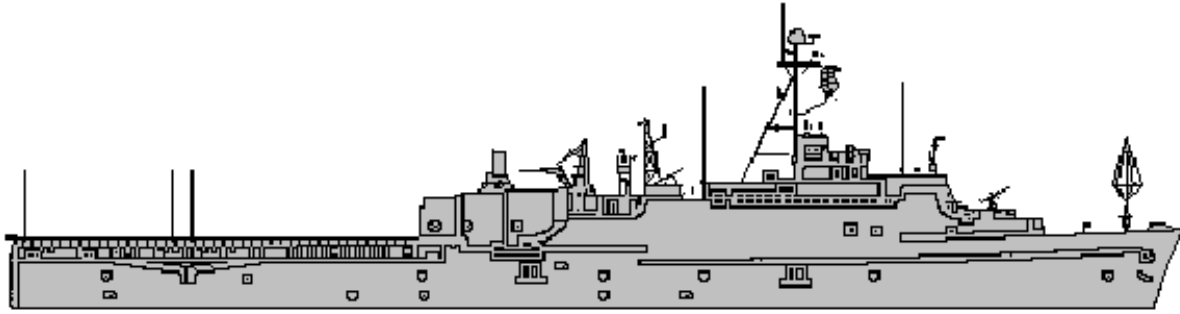
## **Specifications**

<b>Power Plant</b>	Four Avco-Lycoming gas turbines; 12,280 bhp; two shrouded reversible-pitch propellers; four double-entry fans for lift
<b>Length</b>	88 ft
<b>Beam</b>	47 ft
<b>Displacement</b>	181 tons
<b>Deck Area</b>	1, 809 sqft
<b>Speed</b>	40 plus knots with payload
<b>Armament</b>	2 - 12.7mm MGs. Gun mounts will support: M-2HB .50 cal machine gun; Mk-19 Mod3 40mm grenade launcher; M-60 machine gun
<b>Crew</b>	5
<b>Range</b>	200 miles at 40 kts with payload 300 miles at 35 kts with payload
<b>Personnel Capacity</b>	24 Troops 180 w/PTM
<b>Vehicles per Sortie</b>	12 HMMWVs per sortie 4 LAVs per sortie 2 AAVs per sortie 1 M1A1 per sortie 4 M923 per sortie 2 M923 5-Ton Trucks, 2 M198 Howitzers, and 2 HMMWVs per sortie
<b>Support Ship Capacity:</b>	<ul style="list-style-type: none"> <li>• LSD 41 Class.....4 LCAC</li> <li>• LSD 36 Class.....3 LCAC</li> <li>• LPD-4 Class.....1 LCAC</li> <li>• LPD-17 Class.....1 LCAC</li> <li>• LHA Class.....1 LCAC</li> <li>• LHD Class.....3 LCAC</li> </ul>

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## Amphibious Transport Dock – LPD 4 Austin class

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The LPD 4 Austin class of ship combines the functions of three different classes of ships; the landing ship (LSD), the tank landing ship (LST), and the attack cargo ship (LKA). The Amphibious Transport, Dock, is used to transport and land Marines, their equipment and supplies by embarked landing craft or amphibious vehicles augmented by helicopters in amphibious assault.

The assigned mission of the LPD is to transport and land troops and their essential equipment and supplies in an amphibious assault by means of embarked landing craft or amphibious vehicles augmented by helicopter lift.

The LPD is a general purpose amphibious ship with substantial lift capacities for troops, vehicles, landing craft, cargo, and bulk fuel. The LPD is capable of ballasting to permit loading and launching of landing craft and assault amphibious vehicles. Vehicles can move about the various decks by a series of power operated ramps. The well deck can accommodate all types of landing craft currently in the amphibious force inventory. A limited number of helicopters may be transported on the flight deck as the LPD serves as a helicopter platform for landing embarked troops and their supplies. It also serves as a refueling station for helicopters of the landing force. Troops, vehicles, and equipment can be loaded/off-loaded by helicopter and landing craft simultaneously.

Although their capabilities are less than those of the new LSD-41 class, the ships of the Austin class, built between 1965-1971, were considered sufficiently modern to have their service lives extended, and the Navy had planned to inaugurate an overhaul program for all 11 of them commencing in early 1988. Their modernization could have extended their service lives to 2005. However, Congress did not authorize funding for the program. Although the predecessor LPD-1 *Raleigh* class was retired after three decades of service, the ships of this class will remain in service for nearly four decades until they began being replaced by the LPD-17 class beginning in 2003.

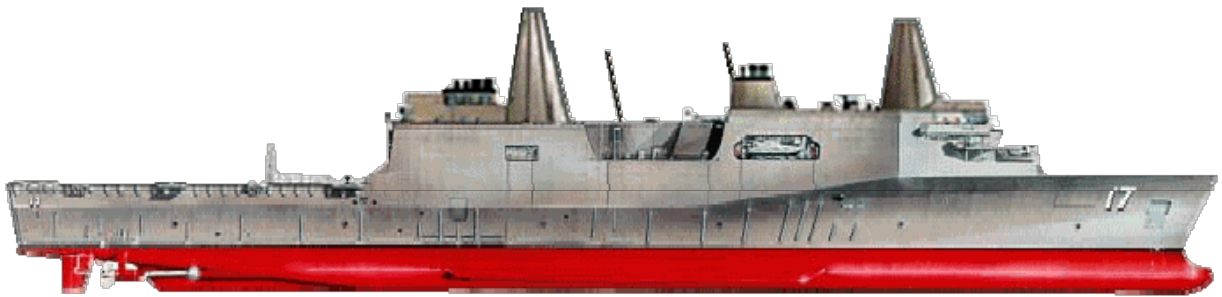
## **Specifications**

<b>Power Plant</b>	(2) boilers, (2) Steam Turbines, (2) shafts (24,000 shp)
<b>Length</b>	570 ft
<b>Beam</b>	84 ft
<b>Draft</b>	23 ft
<b>Displacement</b>	16,905 tons
<b>Speed</b>	21 knots
<b>Crew</b>	Ship's Company: 24 officers, 396 enlisted Marine Detachment: 68 officers, 717 enlisted
<b>Vehicle Square</b>	14,000 sqft
<b>Cargo Cube</b>	51,000 cuft
<b>Landing Craft</b>	(1) LCU or (1) LCACs
<b>Aircraft</b> (2, w/ 4x expanded) Landing Spots	(6) CH-46 Equivalents
<b>Command and Control</b>	Command Information Center (CIC) Troop Operations & Logistics Center (LFOC) Ship's Signals Exploitation Space Flog Plot (Flag configured only) Supporting Arms Coordination Center (SACC) Helicopter Coordination Section SPS-40 – Air Search Radar SPS-60 – Surface Search Radar
<b>Medical</b>	(1) Operating Rooms (12) Post-op/Intensive Care Beds
<b>Armament</b>	(1) – Phalanx 20mm Close-in Weapons System (CIWS) (2) – Mk 38 25mm Machine Gun (2) – M2 .50 Cal Machine Guns (1) – MK 36 Chaff System

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## Amphibious Transport Dock – LPD 17 San Antonio class

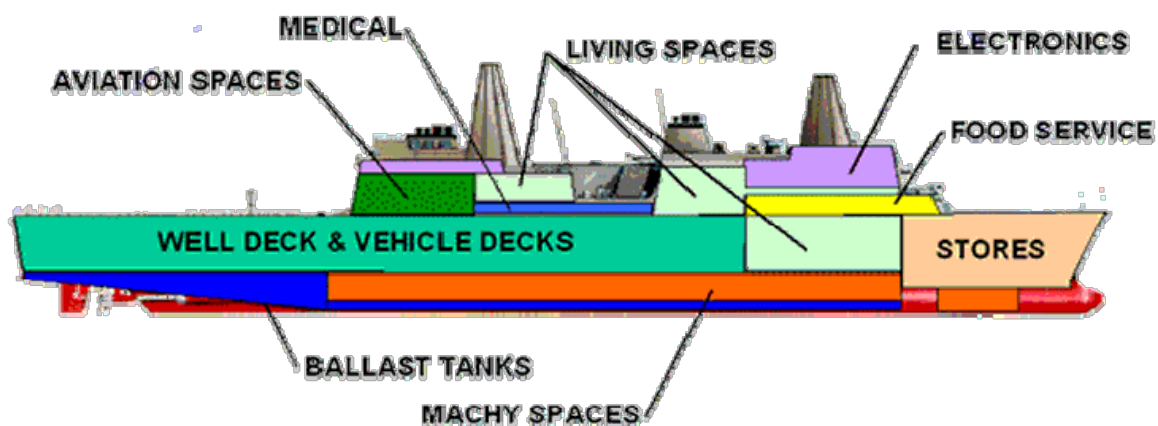
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The SAN ANTONIO (LPD 17) Class of amphibious transport dock ships represents the Navy and Marine Corps' future in amphibious warfare, and is one of the cornerstones in the strategic plan known as "Forward...from the sea". The San Antonio class is the first designed, from the keel up, to execute Operational Maneuver from The Sea [OMFTS] and Ship to Objective Maneuver. It is designed to support embarking, transporting, and landing elements of a Marine landing force in an assault by helicopters, landing craft, amphibious vehicles, and by a combination of these methods to conduct primary amphibious warfare missions.

The LPD 17 integrates with the existing amphibious ship force structure and the Navy's declining shore infrastructure. The LPD 17 class program is the replacement for three classes of amphibious ships that have reached the end of their service life -- the LPD 4, LSD 36, and LST 1179 classes - and one class that has already been retired, the LKA 113.

LPD-17 brings to us a ship designed solely to support the mobility triad (LCAC, AAV, and MV-22). LPD 17 is able to embark, transport, and land elements of the landing force in an assault by helicopters MV-22, landing craft including air cushion (LCAC) and conventional (LCU) landing craft, amphibious vehicles (AAV) and expeditionary fighting vehicles (EFV), and by a combination of these methods. The combat power of this ship is it's embarked Marines and their equipment.



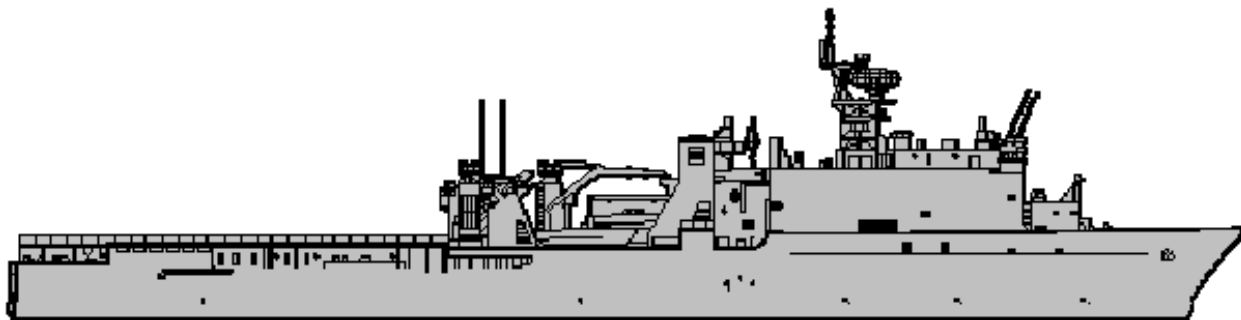
## **Specifications**

<b>Power Plant</b>	(4) Turbo Marine Diesel Engines, (2) boilers, (2) shafts (70,000 shp)
<b>Length</b>	684 ft
<b>Beam</b>	105 ft
<b>Draft</b>	23 ft
<b>Displacement</b>	25,296 tons
<b>Speed</b>	22+ knots
<b>Crew</b>	Ship's Company: 32 officers, 365 enlisted Marine Detachment: 77 officers, 535 enlisted
<b>Vehicle Square</b>	25,000 sqft
<b>Cargo Cube</b>	35,000 cuft
<b>Landing Craft</b>	(1) LCU or (2) LCACs or (4) LCM-8
<b>Aircraft (2) Landing Spots</b>	(4) CH-46 Equivalents
<b>Command and Control</b>	Command Information Center (CIC) Troop Operations & Logistics Center (LFOC) Ship's Signals Exploitation Space Joint Intelligence Center (JIC) Supporting Arms Coordination Center (SACC) Helicopter Coordination Section AN/SPQ-14 (V) - Advanced Sensor Distribution System AN/USQ-119E (V) 27 - Global Command and Control System – Maritime (GCCS-M) AN/KSQ-1 Amphibious Assault Direction System
<b>Medical</b>	(2) Operating Rooms (24) Post-op/Intensive Care Beds (2) Dental Operating Rooms
<b>Armament</b>	(2) - Mk 31 Mod 1 RAM Guided Missile Weapon System (2) - Mk 46 Mod 1 30mm Gun (4) - MK 26 Mod 17 .50 Cal Machine Guns (1) - MK 36 Chaff System AN/SLQ-25 NIXIE Towed Torpedo Countermeasures AN/SLQ-32(V)3 Electronic Warfare (EW) system



## Dock Landing Ship – LSD-41 Whidbey Island class

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The LSD 41 is a modified version of the LSD 36 class with design efforts directed to support emerging amphibious warfare concepts. The ships transport and launch loaded amphibious craft and vehicles with their crews and embarked personnel in amphibious assault operations. The ships feature a 440-foot well deck capable of holding four LCACs, a flight deck able to land and launch up to two CH-53E helicopters, the Navy's latest diesel propulsion and engineering technology, advanced repair facilities, complete medical and dental facilities, and troop berthing accommodations for up to 627 embarked Marines. Limited docking and repair service are provided for both conventional and air cushion craft.

The LSD 41 class ship program replaced the eight aging LSD 28 class ships which reached the end of their service lives during the period 1984-1990. LSD-41 was designed specifically to operate LCAC vessels. It has the largest capacity for these landing craft (four) of any U.S. Navy amphibious platform. The ships use a well deck which is flooded to launch and recover landing craft. LCACs are assault landing craft capable of speeds in excess of 40 knots when carrying a 60-ton payload.

### **Specifications**

<b>Power Plant</b>	(4) 16-cylinder Diesel Engines, (2) shafts (34,000 shp)
<b>Length</b>	609 ft
<b>Beam</b>	84 ft
<b>Draft</b>	20 ft
<b>Displacement</b>	15,165 tons
<b>Speed</b>	20+ knots
<b>Crew</b>	Ship's Company: 22 officers, 391 enlisted Marine Detachment: 34 officers, 470 enlisted
<b>Vehicle Square</b>	11,831sqft
<b>Cargo Cube</b>	8,970 cuft
<b>Landing Craft</b>	(2) LCPLs (4) LCACs, or

**Aircraft** (2) Landing Spots No Organic Aircraft

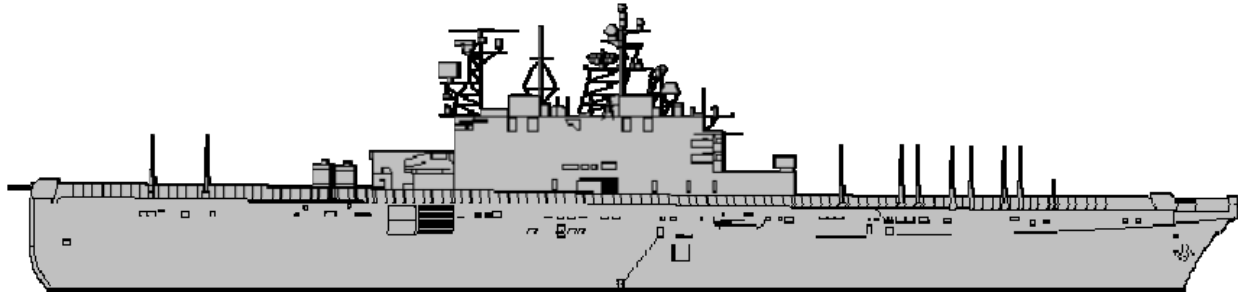
**Command and Control** Command Information Center (CIC)  
Helicopter Coordination Section  
AN/SPS-49 Air Search Radar  
AN/SPS-67 Surface Search Radar  
AN/SPS-64 Navigation Radar

**Medical** (1) Operating Rooms  
(1) Post-op/Intensive Care Bed  
(5) Primary Care Beds  
(2) Isolation Ward Beds  
Ship's Doctor  
Ship's Dentist

**Armament** (2) - 25mm MK 38 Machine Guns  
(2) - 20mm MK 15 Phalanx CIWS mounts  
(2) - .50 cal. machine guns  
(2) - Mk 31 Mod 1 RAM Guided Missile Weapon System  
(2) - Mk 46 Mod 1 30mm Gun  
(4) - MK 26 Mod 17 .50 Cal Machine Guns  
MK 36 Chaff System  
AN/SLQ-25 NIXIE Towed Torpedo Countermeasures  
AN/SLQ-32(V)3 Electronic Warfare (EW) system

## Amphibious Assault Ship – LHA-1 Tarawa class

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The primary war-fighting mission of the LHA-1 Tarawa class is to land and sustain United States Marines on any shore during hostilities. The ships serve as the centerpiece of a multi-ship Amphibious Readiness Group (ARG). Some 3,000 Sailors and Marines contribute to a forward-deployed ARG composed of approximately 5,000 personnel.

The Tarawa class is designed to operate independently or as a unit of a force, as a flagship or individual ship unit in both air and/or surface assaults, these ships are key elements of the amphibious assault forces for the Navy.

A capital ship, the Tarawa class can simultaneously fulfill six war-fighting requirements: flagship for embarked amphibious squadron, flag or general officer staff; aircraft carrier, with a 35-aircraft complement (the LHA's full length flight deck can handle ten helicopters simultaneously); amphibious assault launching platform, employing a variety of surface assault craft; hospital ship, equivalent to the nation's finest local hospitals with 17 ICU beds, 4 operating rooms, 300 beds, a 1,00-unit blood bank, full dental facilities, and orthopedics, trauma, general surgery, and x-ray capabilities; command and control (C4I) ship, with the Navy's most sophisticated SHF and EHF satellite communications capability; and assault provisions carrier able to sustain embarked forces with fuel, ammunition and other supplies.

The ships have an extensive command, communication and control suite. These electronic systems give the amphibious task force commander nearly unlimited versatility in directing the assault mission.

The ships have an extensive mechanical system for vertical and horizontal movement of containerized and palletized supplies from deep cargo holds to assault craft or helicopters. A system of five centerline elevators, conveyor lines and a monorail system move cargo and supplies. Two large elevators, one aft and one portside, move aircraft and equipment from the hangar deck to the flight deck. Wheeled vehicles, trucks, jeeps and tanks can be driven or pulled from any deck level storage position via inclined ramps to either awaiting craft in the well deck or helicopters on the flight deck.

There are 5 active Tarawa class LHAs in the fleet.....3 in San Diego and 2 in Norfolk

## **Specifications**

<b>Power Plant</b>	(2) geared steam turbines, (2) boilers, (2) shafts (70,000 shp)
<b>Length</b>	820 ft
<b>Beam</b>	106 ft
<b>Draft</b>	26 ft
<b>Displacement</b>	Light Displacement: 26,255 tons Full Displacement: 39,925 tons
<b>Speed</b>	24 knots (22 knots sustained)
<b>Crew</b>	Ships Company: 82 officers, 882 enlisted Marine Detachment 1,900 plus
<b>Vehicle Square</b>	28,700 sqft
<b>Cargo Cube</b>	156,000 cuft
<b>Landing Craft</b>	(2) LCU (1) LCAC
<b>Aircraft</b> (9) Landing Spots	(6) AV-8B Harrier attack planes (4) AH-1W Super Cobra attack helicopter (12) CH-46 Sea Knight helicopters (9) CH-53 Sea Stallion helicopters (4) UH-1N Huey helicopters Actual mix depends on mission/43X CH-46 equivalent
<b>Command and Control</b>	Command Information Center (CIC) Integrated Tactical Amphibious Warfare Data System Flag Plot Landing Force Operations Center (LFOC) Ship's Signals Exploitation Space Joint Intelligence Center (JIC) Supporting Arms Coordination Center (SACC) Helicopter Direction Center (HDC) Helicopter Coordination Center Tactical Air Control Center (TACC) 1 AN/SPS-48 radar 1 AN/SPS-49(V)7 radar 1 AN/SPS-64 radar 1 AN/SPS-67 radar AN/SYS-2 Detection/Tracking System 1 MK-23 Target Acquisition System (TAS) MK-91 Fire control System
<b>Medical</b>	(4) Operating Rooms

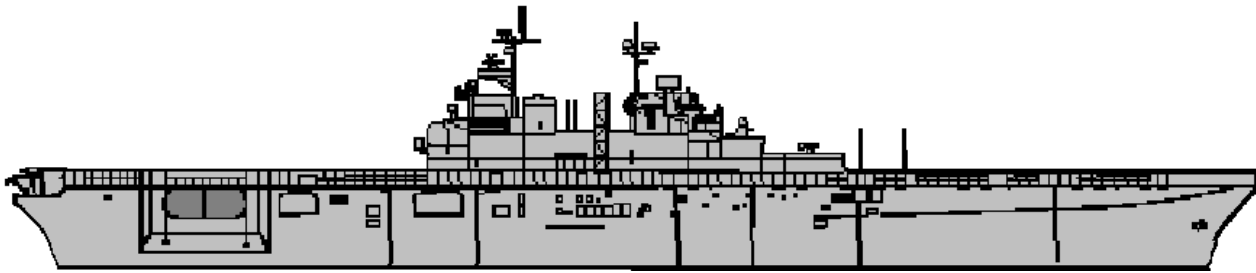
(17) Post-op/Intensive Care Beds  
(1) Isolation ward w/ (4) beds  
(1) Primary Care Ward w/ (48) Beds  
Ship's Doctor  
Ship's Dentist

**Armament**

(2) - 21 Cell Rolling Airframe Missile (RAM)  
(4) - 25mm MK38 Gun Mounts  
(2) - 20-mm Close In Weapons System Block 1  
(5) - .50 Cal Mounts  
(2) - SLQ-25 NIXIE  
(6) - Mk 36 Chaff System

## Amphibious Assault Ship – LHD-1 Wasp Class

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The Wasp-class are the largest amphibious ships in the world. The LHD is an improved follow-on to the five ship Tarawa-class LHAs, sharing the basic hull and engineering plant. The LHD I has an enhanced well deck, enabling it to carry three LCACs (vice one LCAC in the LHAs). The flight deck and elevator scheme is also improved, which allows the ship to carry two more helicopters than its predecessor, the LHA. The LHA can transport one LCAC when the LCAC is placed in the well deck sideways, while the Wasp class amphibious assault (multipurpose) (LHD) ship carries two LCACs which drive in and drive out of the well deck fully loaded. The LHD has 20,000 more cubic feet storage capacity but 5,000 square feet less vehicle storage than an LHA. The LHD has more hangar and deck space than an LHA giving the LHD the capacity to carry three more CH-46 helicopters than the LHA. A Marine Expeditionary Unit (MEU) with an LHA as the large deck amphibious ship requires three additional ships to provide the capabilities required of an MEU. When an LHD is the large deck amphibious ship in the MEU, one to two fewer ships are needed to support the MEU.

WASP class ships are the first to be specifically designed to accommodate the AV-8B Harrier jump jet and the LCAC hovercraft, along with the full range of Navy and Marine helicopters, conventional landing craft and amphibious assault vehicles to support a Marine Expeditionary Unit (MEU) of 2,000 Marines. The ships also carry some of the most sophisticated communications, command and control capabilities afloat, along with state of the art electronic systems and defensive weaponry.

WASP-class ships can also provide command and control and aircraft facilities for sea control missions, while operating with an aircraft carrier battle group. They transport and land ashore not only troops, but also the tanks, trucks, jeeps, other vehicles, artillery, ammunition and various supplies necessary to support the amphibious assault mission. Monorail trains, moving at speeds up to 600 feet per minute, transport cargo and supplies from storage and staging areas throughout the ship to a 13,600 square foot well deck which opens to the sea through huge gates in the ship's stern. There, the cargo, troops and vehicles are loaded aboard landing craft for transit to the beach. Air cushion landing craft can "fly" out of the dry well deck; or the well deck can be ballasted down for conventional craft to float out on their way to the assault area. Helicopter flights also transfer troops and equipment to the beach, while the ship's air traffic control capability simultaneously directs close air tactical support provided by embarked jet aircraft and helicopter gunships.

There are 7 active Wasp class LHDs in the fleet.....2 in San Diego, 4 in Norfolk, and 1 in Sasebo Japan

<b>Power Plant</b>	(2) geared steam turbines, (2) boilers, (2) shafts (70,000 shp)
<b>Length</b>	844 ft
<b>Beam</b>	107 ft
<b>Draft</b>	27 ft
<b>Displacement</b>	Full Displacement 40,532 tons
<b>Speed</b>	22 knots
<b>Crew</b>	Ships Company 104 officers, 1,004 enlisted Marine Detachment: 1,900 plus
<b>Vehicle Square</b>	24,012 sqft
<b>Cargo Cube</b>	145,000 cuft
<b>Landing Craft</b>	(2) LCU Landing Craft, Utility or (3) LCAC Landing Craft, Air Cushion or (6) LCM-8 Landing Craft, Mechanized or (40) AAV Amphibious Assault Vehicle [normal] or (61) AAV Amphibious Assault Vehicle [stowed]
<b>Aircraft</b>	(Actual mix depends upon mission) (6) AV-8B Harrier attack planes (4) AH-1W Super Cobra attack helicopter (12) CH-46 Sea Knight helicopters or (12) V-22 Osprey tilt-rotor (9) CH-53 Sea Stallion helicopters (4) UH-1N Huey helicopters Actual mix depends on mission/43X-CH-46 equivalent
<b>Command and Control</b>	Command Information Center (CIC) Integrated Tactical Amphibious Warfare Data System Flag Plot Landing Force Operations Center (LFOC) Ship's Signals Exploitation Space Joint Intelligence Center (JIC) Supporting Arms Coordination Center (SACC) Helicopter Direction Center (HDC) Helicopter Coordination Center Tactical Air Control Center (TACC) 1 AN/SPS-48 radar 1 AN/SPS-49(V)7 radar 1 AN/SPS-64 radar 1 AN/SPS-67 radar AN/SYS-2 Detection/Tracking System 1 MK-23 Target Acquisition System (TAS) MK-91 Fire control System

(18) Post-op/Intensive Care Beds  
(1) Isolation ward w/ (6) beds  
(1) Primary Care Ward w/ (36) Beds  
Ship's Doctor  
Ship's Dentist

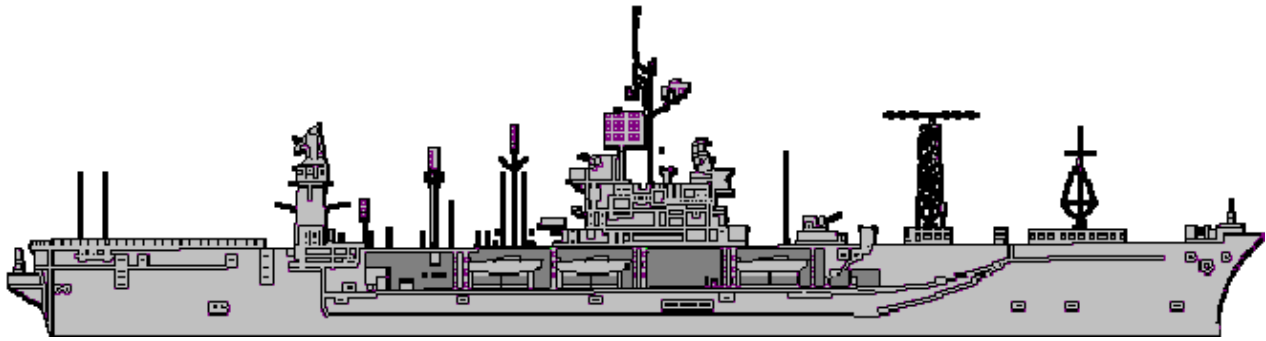
**Armament**

(2) - MK29 launchers for NATO Sea Sparrow  
(3) - MK15 20mm Phalanx CIWS mounts  
(8) - MK33 .50 cal. machine guns  
(1) - MK-36 Chaff System AN/SLQ-  
49 Chaff Bouys  
AN/SLQ-25 NIXIE Towed Torpedo Countermeasures  
AN/SLQ-32(V)3 Electronic Warfare (EW) system



## Amphibious Command Ship – LCC-19 Blue Ridge Class

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The assigned mission of the amphibious command ship (LCC) is to function as the command ship for a joint task force as the command, control, communications, computers, and intelligence (C4I) platform, or for a naval component commander; numbered fleet commander; commander, amphibious task force (CATF); Marine expeditionary force (MEF).

The *USS Blue Ridge* (LCC-19) is distinctive in appearance. The ship can communicate in frequency ranges from high frequency to super high frequency, including two satellite systems for high speed/high volume communication links. The various internal command areas are highly automated to monitor and process information regarding the progress of an amphibious operation. This is the only class of ship designed from its hull up to support the command and control needs of the CATF; commander, landing force (CLF); and tactical air control center (TACC).

### **Specifications**

<b>Power Plant</b>	(1) geared steam turbine, (2) boilers, (1) shaft (22,000 shp)
<b>Length overall</b>	620 ft
<b>Beam extreme</b>	180 ft
<b>Draft</b>	29 ft
<b>Displacement</b>	18,646 tons (16,987 metric tons) full load
<b>Speed</b>	23 knots
<b>Crew</b>	Staff: 217 / Crew: 774 Landing Force: 56 Officers / 153 Enlisted
<b>Vehicle Square</b>	3,015 sqft
<b>Cargo Cube</b>	2,175 cuft
<b>Landing Craft</b>	(2) LCPL

	(1) Utility Boat
<b>Aircraft (1x Spot)</b>	Can accommodate all helicopters. Can carry all helicopters except the CH-53 Sea Stallion
<b>Command and Control</b>	Command Information Center (CIC) Flag Plot Landing Force Operations Center (LFOC) Ship's Signals Exploitation Space Joint Intelligence Center (JIC) Supporting Arms Coordination Center (SACC) Helicopter Direction Center (HDC) Helicopter Coordination Center Tactical Air Control Center (TACC)
<b>Armament</b>	Phalanx 20mm Close-in Weapon System (CIWS) MK-38 25mm Machine Gun M-2 .50 cal Heavy Machine Gun Mk-36 Chaff Rocket Super Rapid Booming Off-board Chaff (SRBOC) Launcher

## Summary

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By projecting combat power precisely at the most advantageous location and time, amphibious operations capitalize on the Marine Corps core competencies and expeditionary mindset, and seek to exploit the element of surprise and capitalize on enemy weakness. By understanding amphibious and expeditionary operations, differences between the two, and how they are related, the student officer will have a better understanding of his/her role in the operating forces.

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## References

Reference Number or Author	Reference Title
JP 3-02	Amphibious Operations
MCRP 3-31B	Amphibious Ships and Landing Craft Data Book
JP 1-02	DoD Dictionary of Military and Associated Terms
MCDP 3	Expeditionary Operations
MCWP 3-31.6	Supporting Arms Coordination in Amphibious Operations
MCRP 3-31B	Amphibious Ships and Landing Craft Data Book
MCRP 3-31.1A	Employment of Landing Craft Air Cushion (LCAC)
MCWP 3-31.6	Supporting Arms Coordination in Amphibious Operations
MCDP 1-0	Marine Corps Operations
MCRP 5-12D	Organization of the Marine Corps Forces
MCO 3120.8	Policy for the Organization of Fleet Marine Forces for Combat
MCDP 1	Warfighting
MCRP 3-31B	Amphibious Ships and Landing Craft Data Book
MCRP 3-31.1A	Employment of Landing Craft Air Cushion (LCAC)
MCWP 3-31.6	Supporting Arms Coordination in Amphibious Operations

## Glossary of Terms and Acronyms

Term or Acronym	Definition or Identification
AAV	Amphibious assault vehicle
AOA	Amphibious operation area
ATF	Amphibious Task Force
ACE	Aviation combat element
ACM	Air contingency MAGTF
CA	California
CE	Command element
LCE	Logistics Combat Element
GCE	Ground combat element
HQ	Headquarters
MAGTF	Marine air-ground task force
MEB	Marine expeditionary brigade
MEF	Marine expeditionary force
MEU	Marine expeditionary unit
MEU(SOC)	Marine expeditionary unit (special operations capable)
NC	North Carolina
NCA	National Command Authority
SPMAGTF	Special Purpose Marine Air-Ground Task Force
CATF	Commander, Amphibious Task Force
CLF	Commander, Landing Force
LF	Landing Force
MPF	Maritime Prepositioning Force
NEO	Noncombatant evacuation operations
OMFTS	Operational Maneuver from the Sea

OPCON	Operational control
PERMA	Planning, embarkation, rehearsal, movement, and action
STOM	Ship-to-Objective Maneuver
TACON	Tactical control
UNAAF	Unified Action Armed Forces

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## Notes

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